# INFORMATION SYSTEMS PROGRAM

## ANNUAL REPORT

INPUT

NOVEMBER 1987

INPUT

NOTES:

# OVERVIEW

- Objectives
- Annual Planning Procedures
- Major Issues
  - Driving Forces
  - Issues and Objectives
  - New Technology
- New Applications
- Budget Analysis

INPUT

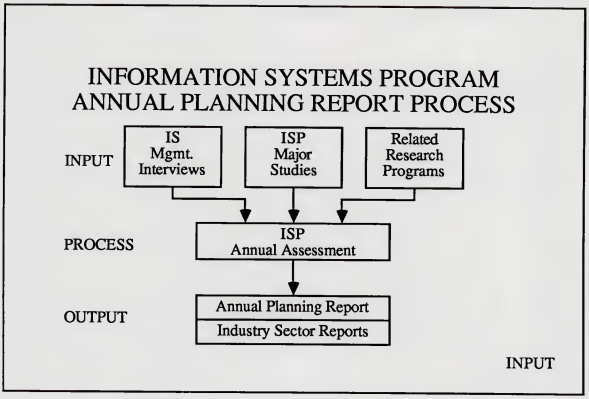
NOTES:

# OBJECTIVES

- Identify and Analyze
  - Business Forces Impacting Information Systems
  - New Technologies of High Impact
  - Trends in Information Systems Pending
- Provide INPUT's Views on
  - Resulting Objectives for IS
  - Key Opportunities & Applications Trends

INPUT

NOTES:




NOTES:

UP87: I-4

# INFORMATION SYSTEMS PROGRAM

## ANNUAL REPORT

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## MAJOR ISSUES

INPUT

NOTES:

## ISSUE HIERACRCHY

| MAJOR ISSUE SECTION | FOCUS | TIMEFRAME |
|---|---|---|
| Driving Forces | Strategic | Over 3 Years |
| Issues | Tactical | Objectives |
| Objectives | Operational | 0 to 2 Years |

INPUT

NOTES:

# TECHNOLOGICAL DEVELOPMENTS OPTIONS AND ISSUES

- Data Base–Relational and Distributed
- Workstations
- Networking
- Electronic Data Interchange
- Managing Technology

INPUT

NOTES:

## DRIVING FORCES

- Rising Expectations of Senior Management
- Expanding Wealth of New Technologies
- Cost-Sensitive Business Environment

INPUT

NOTES:

## DRIVING FORCES
## (Continued)

- Ability to Conceptualize More Complex Applications
- Growing Interaction Between Large Corporations
- Unstable Organizational Environments

INPUT

NOTES:

## MAJOR ISSUES-1988 AND BEYOND

- Data Management
- Connectivity
- Integration
- User Involvement
- Development Productivity
- Business Contribution

INPUT

NOTES:

## MAJOR ISSUES

ELEMENTS

Current
Status/
Activities

INPUT

NOTES:

# MAJOR ISSUES

ELEMENTS

Current
Status/
Activities

→

TRENDS

Current/
Projected
Response

→

INPUT

NOTES:

# MAJOR ISSUES

| ELEMENTS | | TRENDS | | OBJECTIVES |
|---|---|---|---|---|
| Current Status/ Activities | → | Current/ Projected Response | → | Goals for IS |

INPUT

NOTES:

# MAJOR ISSUE-DATA MANAGEMENT

ELEMENTS

Physically
Distributed
Data

Growing User
Access ~~Process~~

Multiple DBMS
Technologies

Inadequate
Data Control

INPUT

NOTES:

# MAJOR ISSUE-DATA MANAGEMENT

TRENDS

Move to RDBMS

Adopting DBMS on Distributed Systems

Renewed Move to Data Dictionaries

→

INPUT

NOTES:

# MAJOR ISSUE-DATA MANAGEMENT

OBJECTIVES

Learn RDBMS

→ Train the User on RDBMS

Select a Standard for Each Level

Strengthen Data Processes

INPUT

NOTES:

## MAJOR ISSUE-INTEGRATION

ELEMENTS

Multivendor Environments

Computer to Computer Data Transfer

Larger, More Complex Applications

Data Transfer to Outsiders

→

INPUT

NOTES:

# MAJOR ISSUE-INTEGRATION

TRENDS

Dist'd. Processing Strategies

Vendor Support for Standards

Purchase Decisions Tied to Integration

Outside Expertise

→

INPUT

NOTES:

# MAJOR ISSUE-INTEGRATION

OBJECTIVES

Standards,
Standards,
Standards

→ Pressure
the Vendor

Educate
the User

INPUT

NOTES:

## MAJOR ISSUE-CONNECTIVITY

ELEMENTS

More PCs than Terminals

PC is the Manager's Terminal

Bi-Directional Data Transfer

Power of the Workstation Growing Quickly

→

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NOTES:

## MAJOR ISSUE-CONNECTIVITY

TRENDS

PCs Commonly Connected

PC Interface as Standard

PC as Dept'l. System Workstations

LANs Evolving Slowly

→

INPUT

NOTES:

# MAJOR ISSUE-CONNECTIVITY

OBJECTIVES

Standards for Connectivity

→ Info Center in Charge

Programmable Workstation Preference

INPUT

NOTES:

# MAJOR ISSUE-USER INVOLVEMENT

ELEMENTS

Mgmt. is the User

Appetite for Data

Dept'l. Computers vs. PCs

Applications without Rules

Power User's Growing Influence

→

INPUT

NOTES:

## MAJOR ISSUE-USER INVOLVEMENT

TRENDS

More Power at the Workstation

Access to Data

Defining Own Environment

Developing Own Applications

→

INPUT

NOTES:

# MAJOR ISSUE-USER INVOLVEMENT

OBJECTIVES

Strengthen
End-User Computing
Function

→ Flexible Standards

Education about
Application
Development

Education about
IS Strategy

INPUT

NOTES:

# MAJOR ISSUE-
# DEVELOPMENT PRODUCTIVITY

ELEMENTS

Focus on Devel't. and Architecture

Infra-structure Changing Rapidly

Control over Development Changing

Impact on Installed Processes and Applications

→

INPUT

NOTES:

# MAJOR ISSUE-
# DEVELOPMENT PRODUCTIVITY

TRENDS

Addressing
Entire Process

Many CASE Tools-
No Proven Leader

4GLs Not the
Long-Term Answer

Go Slow Attitude

Professional Services
Co's. Leading the Way

INPUT

NOTES:

# MAJOR ISSUE-
# DEVELOPMENT PRODUCTIVITY

OBJECTIVES

Study CASE-Don't Jump Too Fast

→ User Involvement in Large Applications

Set Rules for User Applications

User Education on Planning for Computing

INPUT

NOTES:

## MAJOR ISSUE-
## BUSINESS CONTRIBUTION

ELEMENTS

Senior User Influence

Greater Return on Investment

Business Knowledge of Developers

Senior Mgmt. Expectations Growing

→

INPUT

NOTES:

# MAJOR ISSUE-
# BUSINESS CONTRIBUTION

TRENDS

IS Executive
Stature Grows

Increased Business
Justification

Use of Outside
Development
Firms

→

INPUT

NOTES:

# MAJOR ISSUE-
# BUSINESS CONTRIBUTION

OBJECTIVES

Assume Strategic Role

→ Expose Senior Mgmt. to Technology

Monitor Competition's IS Program

Proactively Consider Outside Experts

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NOTES:

# INFORMATION SYSTEMS RECOMMENDED CHANGES OF EMPHASIS

| 1987-1992 | | |
|---|---|---|
| Data Processing | → | Information Flow |
| Information Quantity | → | Information Quality |
| Automation of Process | → | Improvement of Process |

INPUT

NOTES:

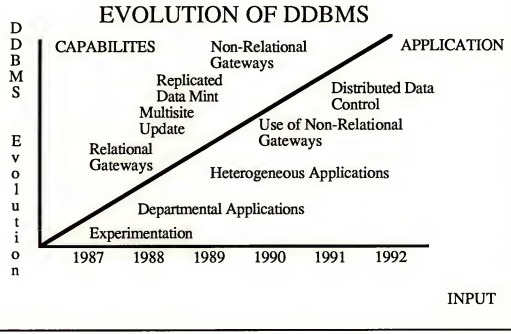
# INFORMATION SYSTEMS PROGRAM

## ANNUAL REPORT

## IMPACTS OF NEW TECHNOLOGY

INPUT

NOTES:


EVOLUTION OF DDBMS
DDBMS Evolution
CAPABILITES
APPLICATION
Non-Relational Gateways
Replicated Data Mint
Distributed Data Control
Multisite Update
Use of Non-Relational Gateways
Relational Gateways
Heterogeneous Applications
Departmental Applications
Experimentation
1987
1988
1989
1990
1991
1992
INPUT

NOTES:

# DDBMS-CRITICAL SUCCESS FACTORS

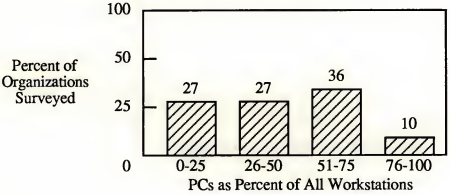
1. Know Relational DBMS Technology
2. Audit the Data Administration Function
3. Do a Controlled Experiment
4. Use a Homogeneous DBMS Environment
5. Involve a Mature End User
6. Use a Geographically Dispersed Application
7. Select a Non-Strategic Aplication

INPUT

NOTES:

# WORKSTATION TRENDS

PERSONAL COMPUTERS AS A PERCENTAGE OF ALL WORKSTATIONS

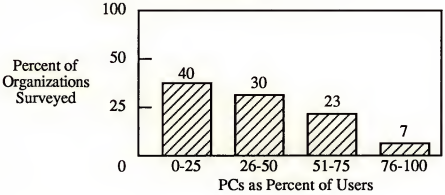



INPUT

NOTES:

# WORKSTATION TRENDS

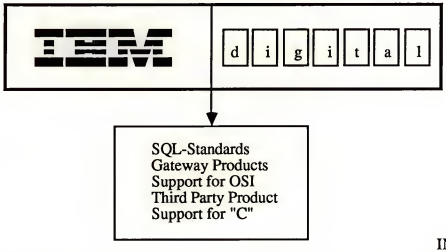
PERSONAL COMPUTERS AS A PERCENTAGE OF USERS




INPUT

NOTES:

# NETWORKING
# THE COMMON GROUND

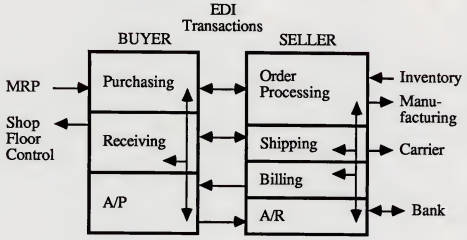



INPUT

NOTES:

UP87: III-7

# EDI APPLICATIONS




INPUT

NOTES:

# EDI
# "THE WAVE OF THE FUTURE"

- Applications
- Enhanced Services: E-mail, E-forms, Data Bases
- Internetworking
- Media (Data, Graphics, Voice, Video)

INPUT

NOTES:

# IS MANAGEMENT FOCUS

| AREA | NEED |
|---|---|
| TECHNOLOGY INTEGRATION | Infrastructure<br>Data Management<br>User Interfaces |
| MANAGEMENT OF IS | Productivity of IS<br>Simplification of Support<br>User-Managed Development |
| STRATEGIC AND ADVANCED SYSTEMS | |

INPUT

NOTES:

# INFORMATION SYSTEMS PROGRAM

## ANNUAL REPORT

## NEW APPLICATION TRENDS AND DEVELOPMENT RESOURCE ALLOCATION

INPUT

NOTES:

# NEW APPLICATION TRENDS
# CROSS INDUSTRY SUMMARY

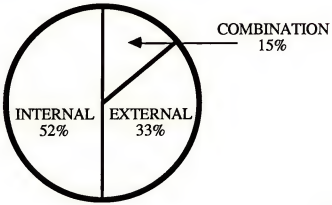
- Electronic Data Interchange
- Business Analysis and Management Tools
- Purchasing Package Software
- Strategic Applications
- RDBMS on the Minicomputer (MID) Level

INPUT

NOTES:

# SOURCE OF DEVELOPMENT RESOURCES

GROUP ONE



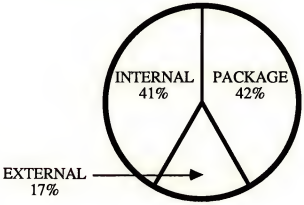

INPUT

NOTES:

UP87: IV-3

# SOURCE OF DEVELOPMENT RESOURCES

GROUP TWO



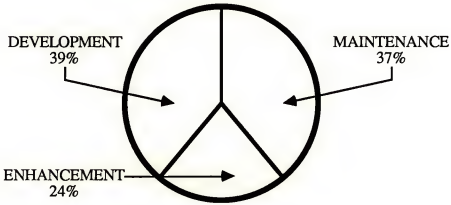

INPUT

NOTES:

UP87: IV-4

# ASSIGNMENT OF APPLICATIONS

DEVELOPMENT STAFF




INPUT

NOTES:

UP87: IV-5

# INFORMATION SYSTEMS PROGRAM

## ANNUAL REPORT

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## BUDGET ANALYSIS
## 1987-1988

INPUT

NOTES:

UP87: V-1

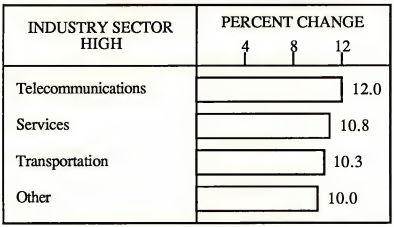
## BUDGET CHANGE FOR ALL INDUSTRIES


INPUT

NOTES:

UP87: V-2

## INDUSTRY COMPARISON

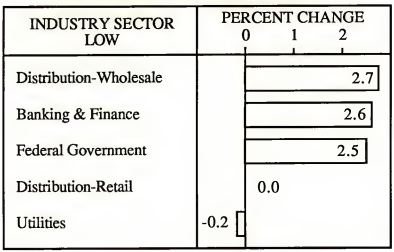



INPUT

NOTES:

UP87: V-3

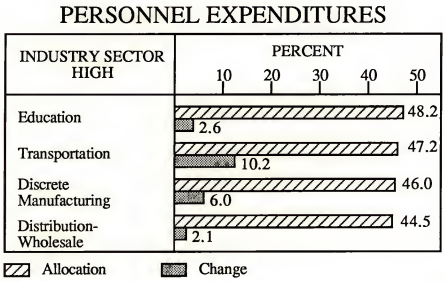
# INDUSTRY COMPARISON




INPUT

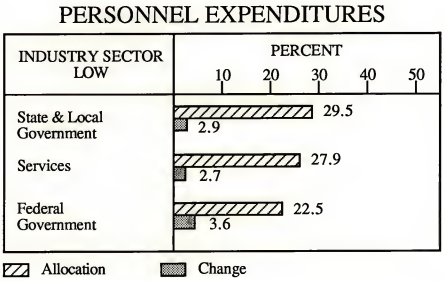
NOTES:

UP87: V-4


PERSONNEL EXPENDITURES
INDUSTRY SECTOR HIGH
PERCENT
10
20
30
40
50
Education
48.2
2.6
Transportation
47.2
10.2
Discrete Manufacturing
46.0
6.0
Distribution-Wholesale
44.5
2.1
Allocation
Change

INPUT

NOTES:


PERSONNEL EXPENDITURES
INDUSTRY SECTOR
LOW
PERCENT
10
20
30
40
50
State & Local Government
29.5
2.9
Services
27.9
2.7
Federal Government
22.5
3.6
Allocation
Change

INPUT

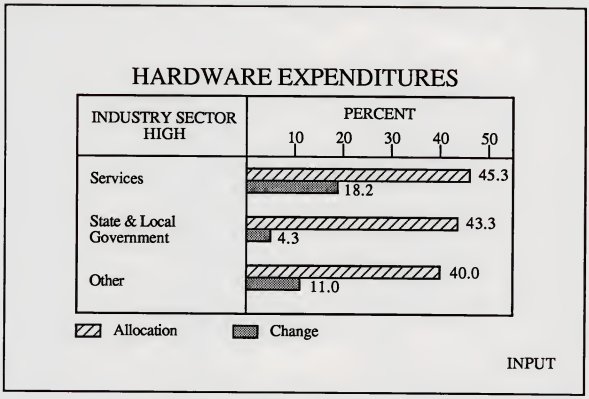
NOTES:

# PERSONNEL EXPENDITURES

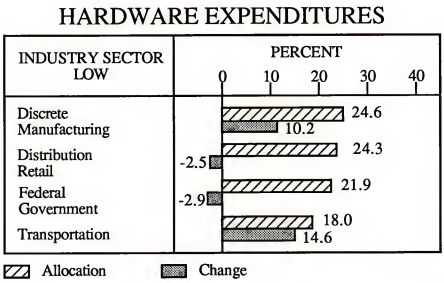
| INDUSTRY SECTOR | ALLOCATION (Percent) | CHANGE (Percent) |
|---|---|---|
| Largest Change<br>Insurance | 34.1 | 15.3 |
| Smallest Change<br>Distribution-Retail | 41.8 | 1.1 |

INPUT

NOTES:


HARDWARE EXPENDITURES
INDUSTRY SECTOR HIGH
PERCENT
10
20
30
40
50
Services
45.3
18.2
State & Local Government
43.3
4.3
Other
40.0
11.0
Allocation
Change
INPUT

NOTES:


HARDWARE EXPENDITURES
INDUSTRY SECTOR
LOW
PERCENT
0
10
20
30
40
Discrete Manufacturing
24.6
10.2
Distribution Retail
24.3
-2.5
Federal Government
21.9
-2.9
Transportation
18.0
14.6
Allocation
Change

INPUT

NOTES:

# HARDWARE EXPENDITURES

| INDUSTRY SECTOR | ALLOCATION (Percent) | CHANGE (Percent) |
|---|---|---|
| Largest Change Services | 45.3 | 18.2 |
| Smallest Change Federal Government | 21.9 | -2.9 |

INPUT

NOTES:

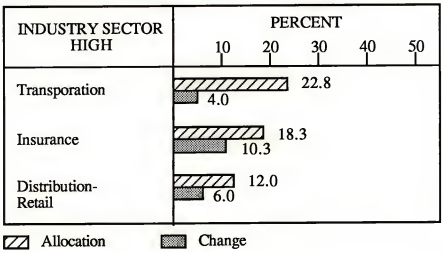
# HARDWARE EXPENDITURES

PERCENT CHANGE
MAINFRAME-MINI-MICRO

| INDUSTRY SECTOR | MAIN | MINI | MICRO | MASS | OTHER | TOTAL |
|---|---|---|---|---|---|---|
| Services | 18.8 | 0.0 | 18.8 | 0.0 | 17.8 | 18.2 |
| Transport. | 16.4 | 8.5 | 7.1 | 0.0 | 0.0 | 14.6 |
| Discr. Mfg. | 10.9 | 6.2 | 15.1 | 8.0 | 3.5 | 10.2 |

INPUT

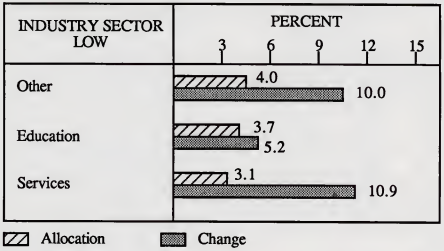
NOTES:




NOTES:

UP87: V-12

## DATA COMMUNICATIONS EXPENDITURES




INPUT

NOTES:

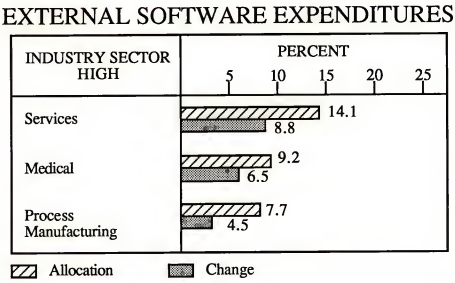
UP87: V-13

## DATA COMMUNICATIONS EXPENDITURES

| INDUSTRY SECTOR | ALLOCATION (Percent) | CHANGE (Percent) |
|---|---|---|
| Largest Change | | |
| Insurance | 18.3 | 10.3 |
| Smallest Change | | |
| Telecommunications | 5.3 | -12.0 |

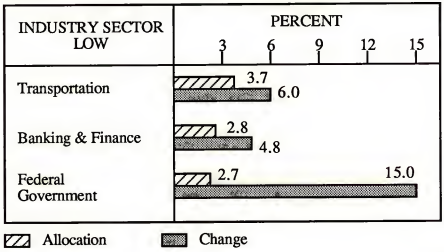
INPUT

NOTES:


EXTERNAL SOFTWARE EXPENDITURES
INDUSTRY SECTOR HIGH
PERCENT
5
10
15
20
25
Services
14.1
8.8
Medical
9.2
6.5
Process Manufacturing
7.7
4.5
Allocation
Change

INPUT

NOTES:


EXTERNAL SOFTWARE EXPENDITURES
INDUSTRY SECTOR
LOW
PERCENT
3
6
9
12
15
Transportation
3.7
6.0
Banking & Finance
2.8
4.8
Federal
Government
2.7
15.0
Allocation
Change

INPUT

NOTES:

# EXTERNAL SOFTWARE EXPENDITURES

| INDUSTRY SECTOR | ALLOCATION (Percent) | CHANGE (Percent) |
|---|---|---|
| Largest Change | | |
| Telecommunications | 7.2 | 19.0 |
| Smallest Change | | |
| Distribution-Retail | 6.1 | -1.4 |

INPUT

NOTES: